

What is claimed is:

1. A voice application creation and deployment system comprising:
 - 5 a voice application server for serving voice applications to clients over a data network;
at least one voice portal node having access to the data network, the portal node for facilitation of client interaction with the voice applications;
and
 - 10 a behavioral adaptation engine executable from the application server;
characterized in that the behavioral adaptation engine intercepts client responses during voice interaction with a served application, analyzes them for one or a combination of behavior patterns and mood states
 - 15 according to pre-existing constraints and received client information, and determines which of a set of possible dialog responses including linked to or insert able options will be submitted for VXML page rendering to create a next enterprise response played to the client.
- 20 2. The system of claim 1 wherein the data network is the Internet network.
3. The system of claim 1 wherein the data network is a combination of the Internet and telephony network.
- 25 4. The system of claim 1 wherein the behavioral adaptation engine is part of the application logic of the voice application server.

5. The system of claim 1 wherein the at least one voice portal is an interactive voice response system combined with a telephony server.
6. The system of claim 1 wherein the at least one voice portal is a computerized node connected to a data network having access to the Internet.
7. The system of claim 1 wherein the behavioral adaptation engine analyzes audio files recorded at the at least one voice portal and sent to the application server as digital audio files attached to client responses.
8. The system of claim 1 wherein the behavioral adaptation engine executes upon receipt of a trigger event.
9. The system of claim 1 wherein the constraints are related to one or a combination of menu navigation behavior or perceived mood state of the client.
10. The system of claim 1 wherein the dialog responses and linked options are stored in a data store and are accessible to the behavioral adaptation engine.
11. The system of claim 1 wherein the received client information includes one or a combination of line identification, number identification, client history data, voice imprint results, and recorded voice samples.
12. The system of claim 1 wherein voice sampling is used to discern mood.

13. The system of claim 1 wherein received client information is used in conjunction with voice analysis to determine a response.

5. 14. The system of claim 1 wherein the behavioral adaptation engine detects voice inflection variances and volume characteristics of sampled audio to facilitate mood discernment of a client.

10 15. The system of claim 14 wherein the variances and volume characteristics of an interaction are collected over multiple interactions with a same application to develop statistics used in gauging enterprise response probability values.

16. A behavioral adaptation engine integrated with a voice application creation and deployment system comprising:

15 at least one data input port for receiving XML-based client interaction data including audio files attached to the data;

 at least one bi-directional data port for sending data to and receiving data from external data systems and modules;

20 a logic processing component including an XML reader and voice player and analyzer for processing received data; and

 a decision logic component for processing result data against one or more constraints;

25 characterized in that the behavioral adaptation engine intercepts client data including dialog from client interaction with a served voice application in real time and processes the received data for behavioral patterns and if attached, voice characteristics of the audio files whereupon the engine according to the results and one or more constraints identifies one

or a set of possible enterprise responses for return to the client during interaction.

5 17. The engine of claim 16 wherein the engine is hosted in a voice application server.

18. The engine of claim 17 wherein the server is hosted on the Internet network.

10 19. The engine of claim 16 wherein the voice application and deployment system includes at least one voice portal for facilitation of client access to voice applications.

15 20. The engine of claim 16 wherein the engine is executed to function upon receipt of a trigger event.

21. The engine of claim 16 wherein the constraints are related to one or a combination of menu navigation behavior or perceived mood state of the client.

20 22. The engine of claim 16 wherein data from external data resources is used as additional input data for decision processing.

25 23. The engine of claim 16 wherein the received client data includes one or a combination of line identification, number identification, client history data, and voice imprint results.

24. The engine of claim 17 wherein voice sampling is used to discern mood state.

25. The engine of claim 16 wherein the voice analyzer detects voice
5 inflection variances and volume characteristics of sampled audio to facilitate mood discernment of a client.

26. The engine of claim 25 wherein the variances and volume characteristics
of an interaction are collected over multiple interactions with a same
10 application to develop statistics used in gauging enterprise response probability values.

27. A method for identifying an appropriate one or set of a plurality of voice
application dialog responses to data input resulting from a client interaction
15 with a voice application comprising:

- (a) receiving the data input during run of the voice application;
- (b) interpreting the data input;
- (c) analyzing the input for validity of one or more constraints;
- (d) comparing the analyzed results with additional external data;
- 20 (e) analyzing the comparison results for continued validity of the one or more constraints; and
- (f) identifying one or more available response options according to the valid constraints.

28. The method of claim 27 wherein the voice application is VXML
compliant.

29. The method of claim 27 wherein in step (a) the data input includes client identification data, client dialog data, and digital audio sampled from the dialog.

5 30. The method of claim 27 wherein steps (d) and (e) are optional steps.

31. The method of claim 27 wherein in step (c) the constraint validity lends to indication of mood state determination of the client.

10 32. The method of claim 27 wherein in step (c) the constraint validity lends to indication of behavioral state determination of the client.

33. The method of claim 27 wherein in step (c) the constraint validity lends to an indication of both mood state and behavioral state of the client.

15 34. The method of claim 27 wherein in step (d) the external data includes statistical data resulting from of past interactions with the same dialog of the same application.

20 35. The method of claim 27 wherein in step (f) identification of one or more available response options includes submitting the one or more response options to an external module for further processing and narrower selection.

25 36. The method of claim 35 wherein the external module is a text-to-speech pre-processor.